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FIG. 4

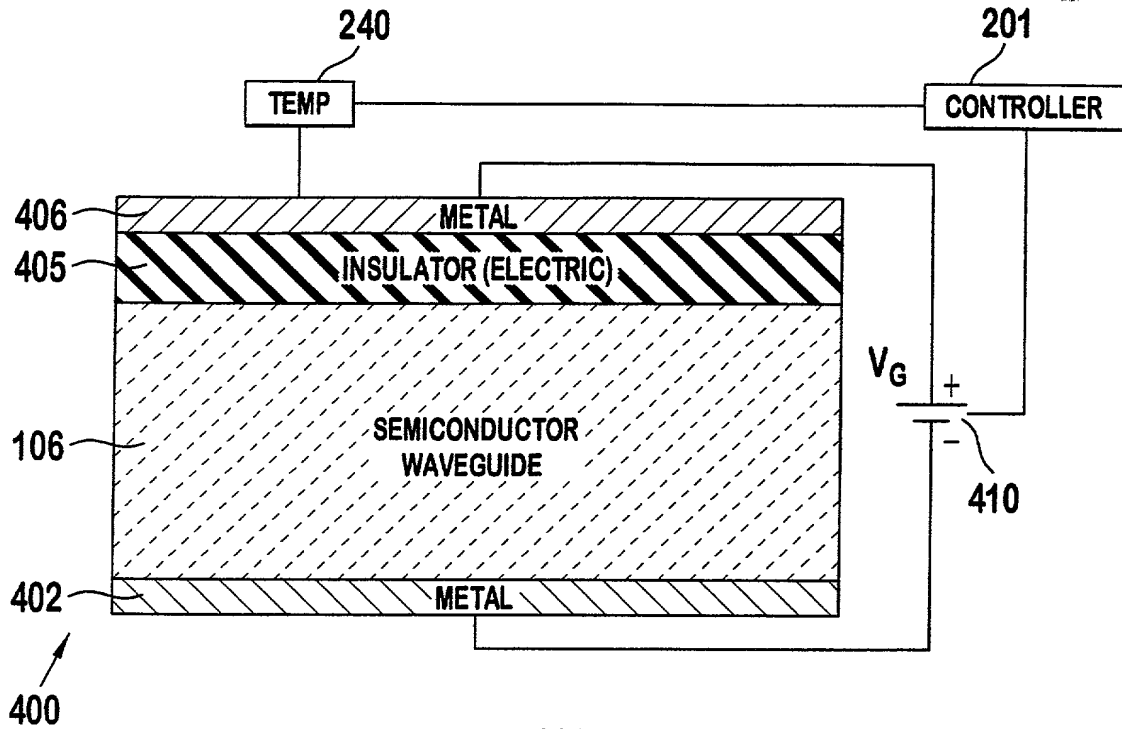


FIG. 5

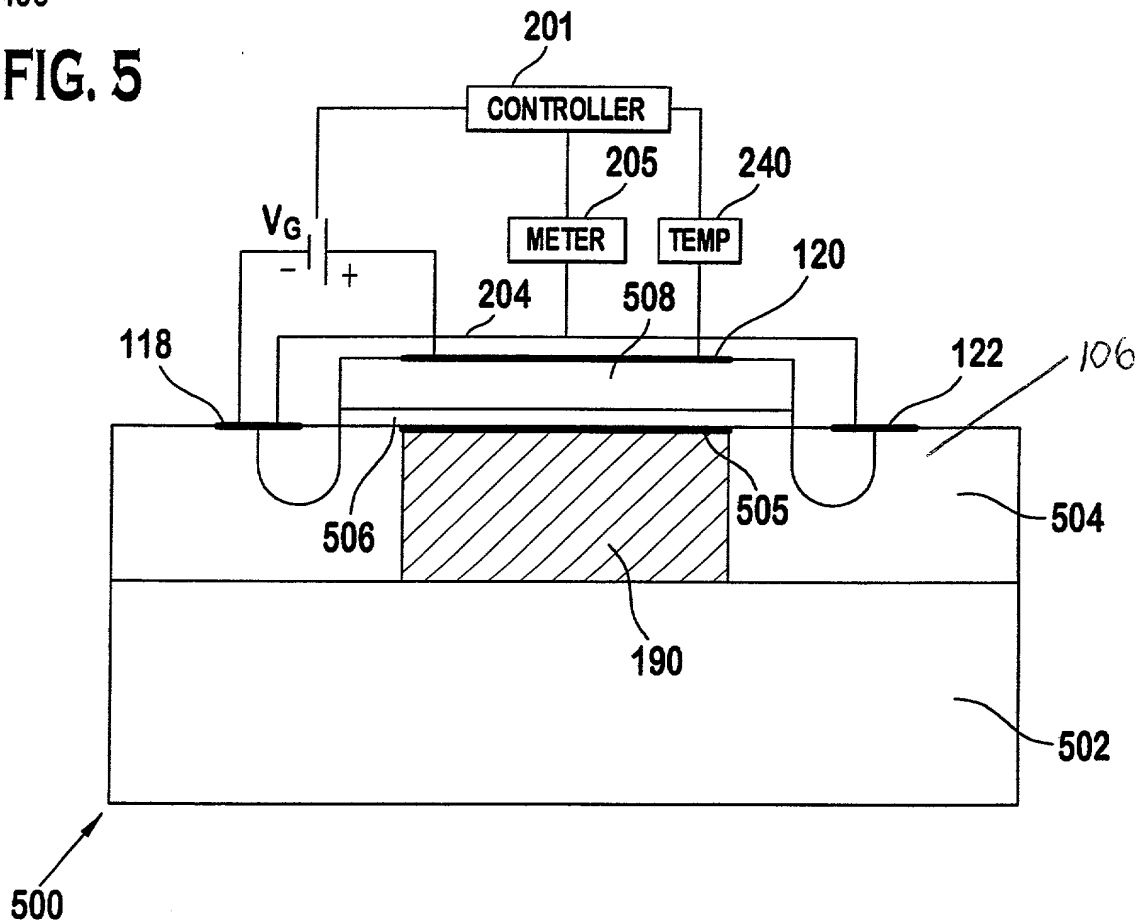


FIG. 1 is a schematic diagram of a waveguide structure. The structure consists of a central core with a core index of  $n$ , bounded by a first electrical insulator layer (104) and a second electrical insulator layer (110). The total height of the structure is  $h$ . A ray of light is shown entering from the left, reflecting off the bottom boundary, and exiting to the right. The angle of incidence is labeled  $\theta_1$ , and the angle of reflection is labeled  $\theta_2$ . The wave vector  $k_2$  is shown as a vector with a horizontal component  $k_y$  and a vertical component  $k_z$ .

**FIG. 13**

FIG. 13 is a schematic diagram of a system 100 for monitoring a device 1300. The device 1300 is shown as a rectangular block containing a central component 1310. The central component 1310 has internal features 1312 and 1314, and is surrounded by regions 1304, 1306, and 1308. The system 100 includes a meter 204 connected to a point 112 on the device, and a controller 201 connected to a temperature sensor 114 and a battery 1322. A battery 1320 is also connected to the device. A vertical arrow 15 indicates a direction of measurement or flow.

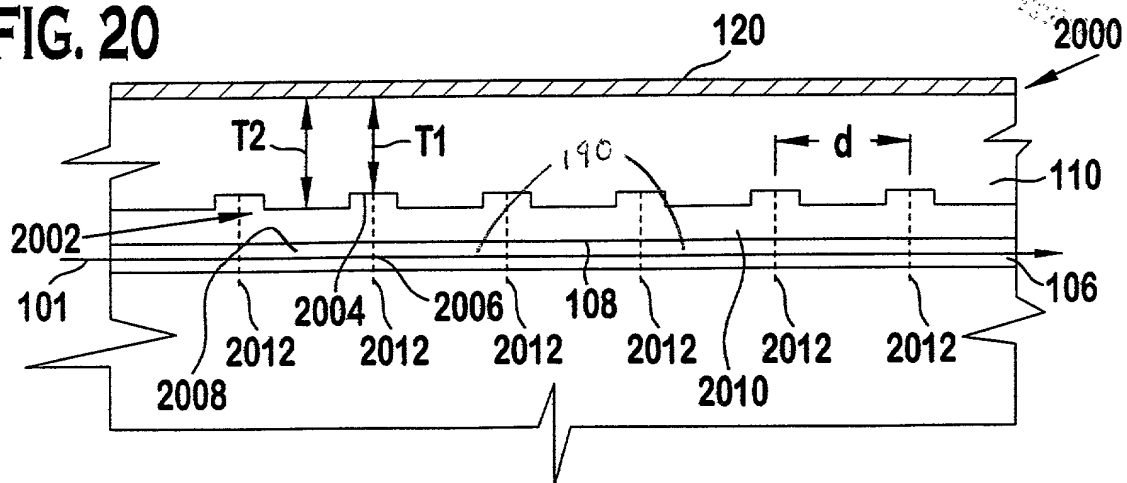


FIG. 21

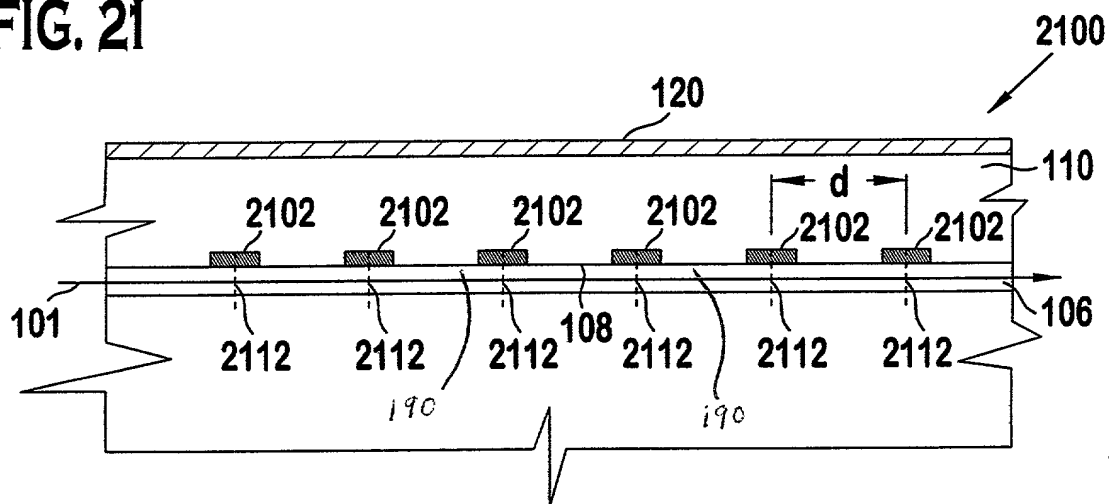
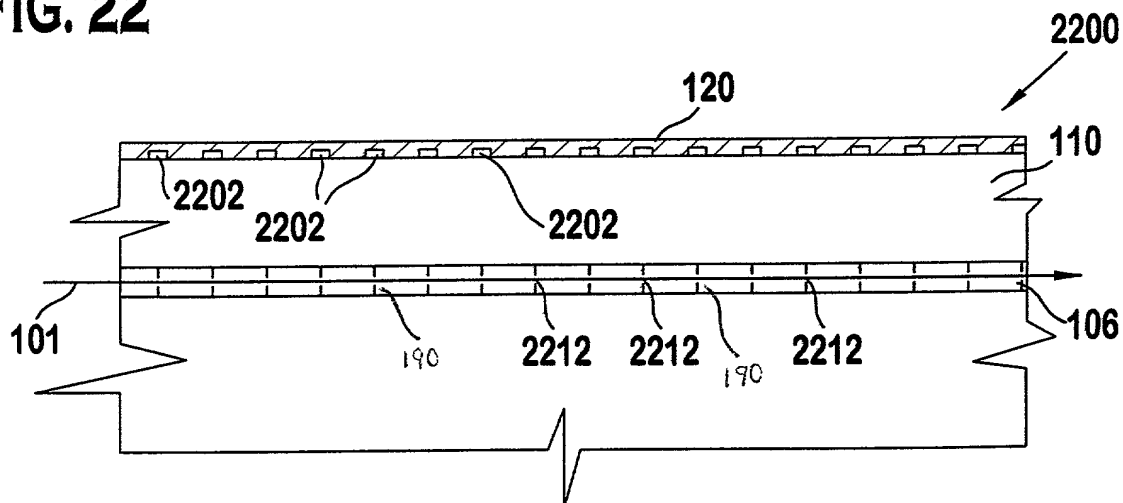


FIG. 22



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FIG. 30

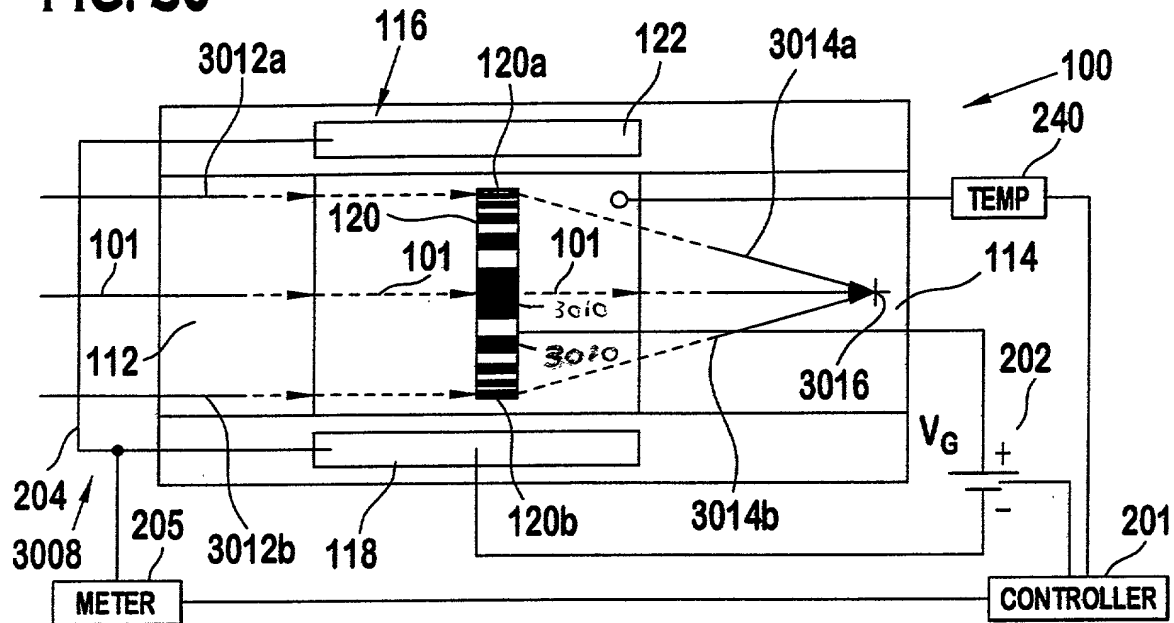
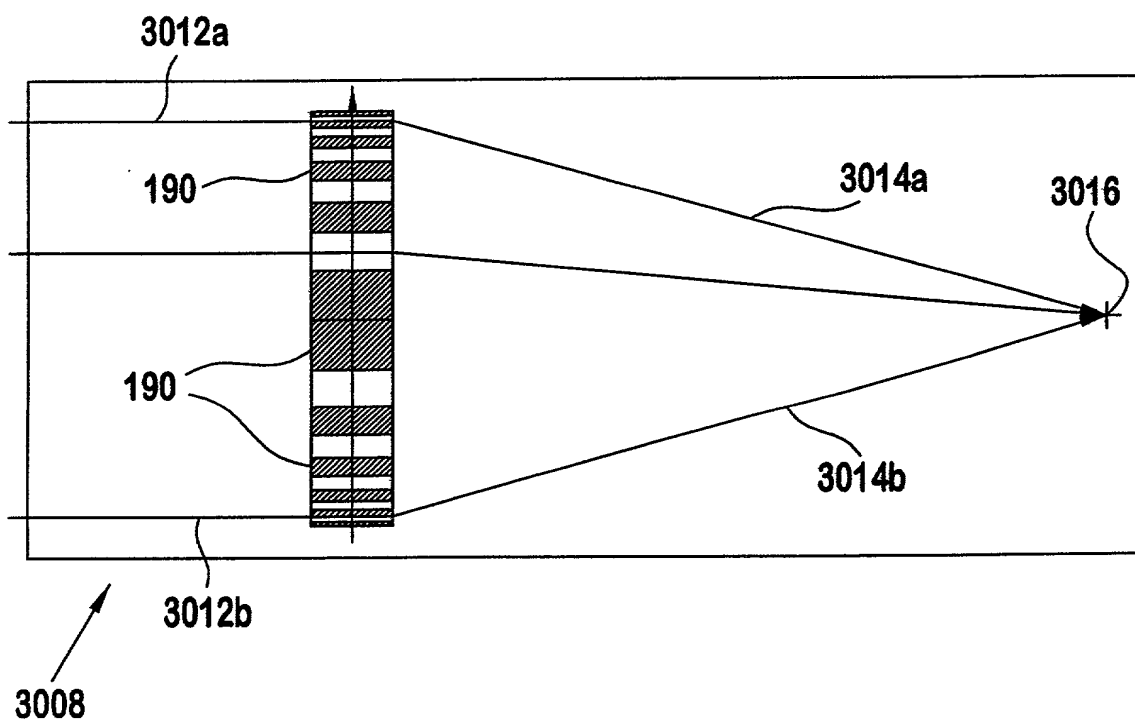


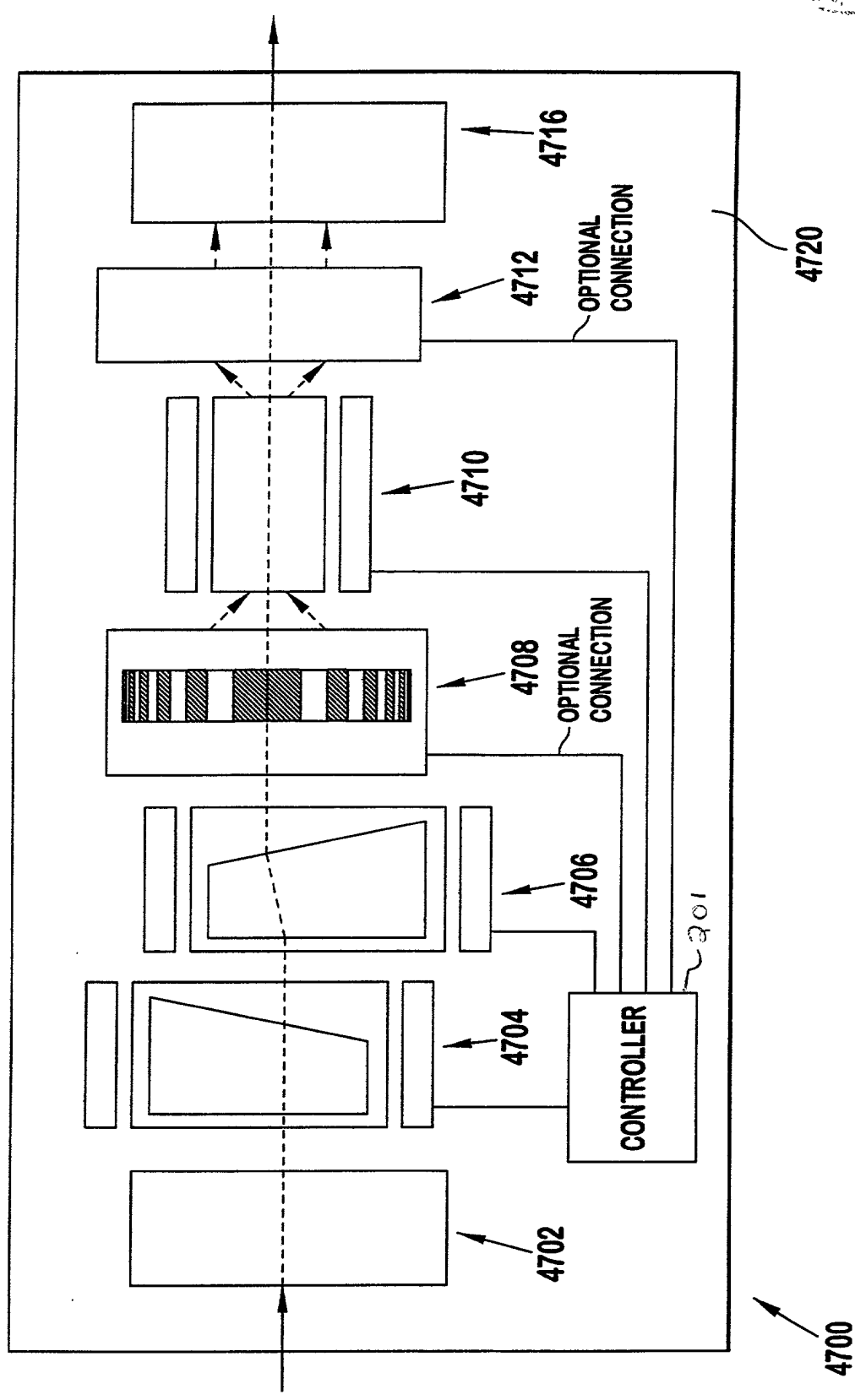
FIG. 30A



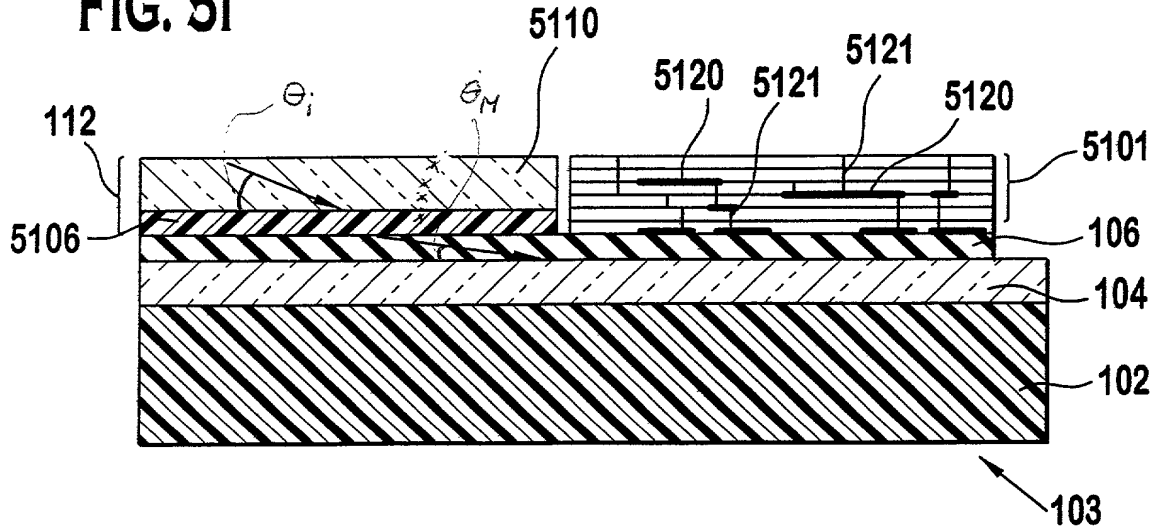
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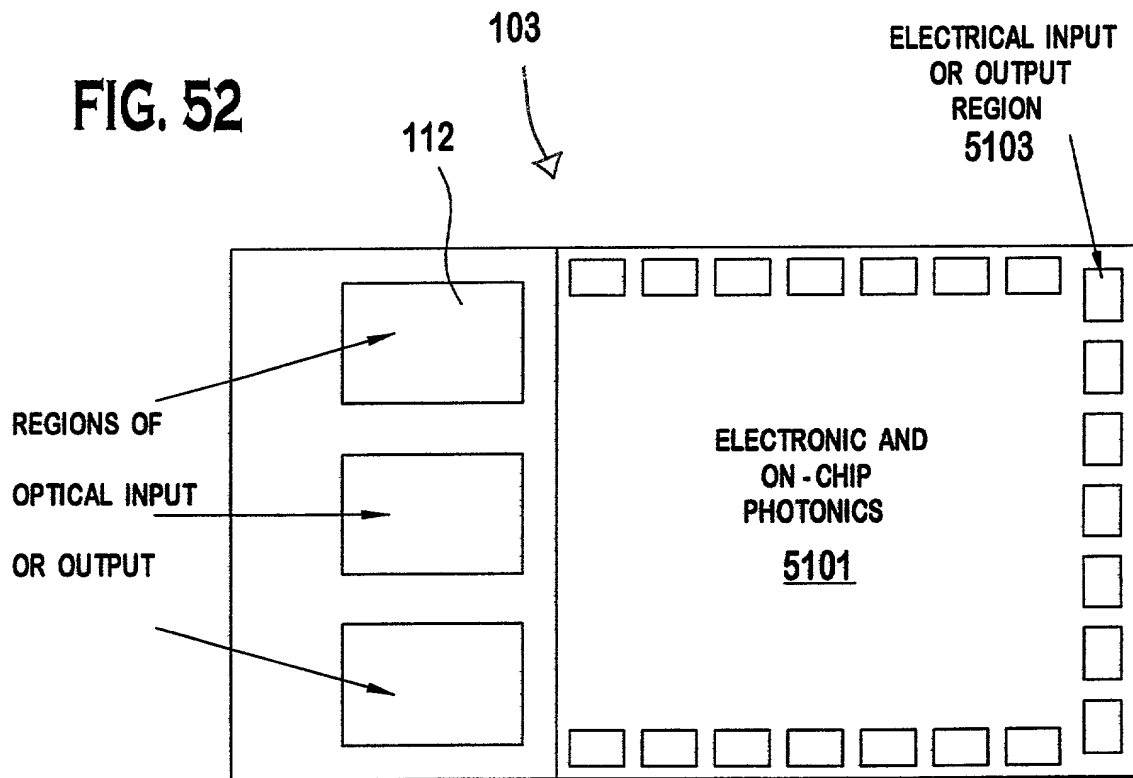
FIG. 47



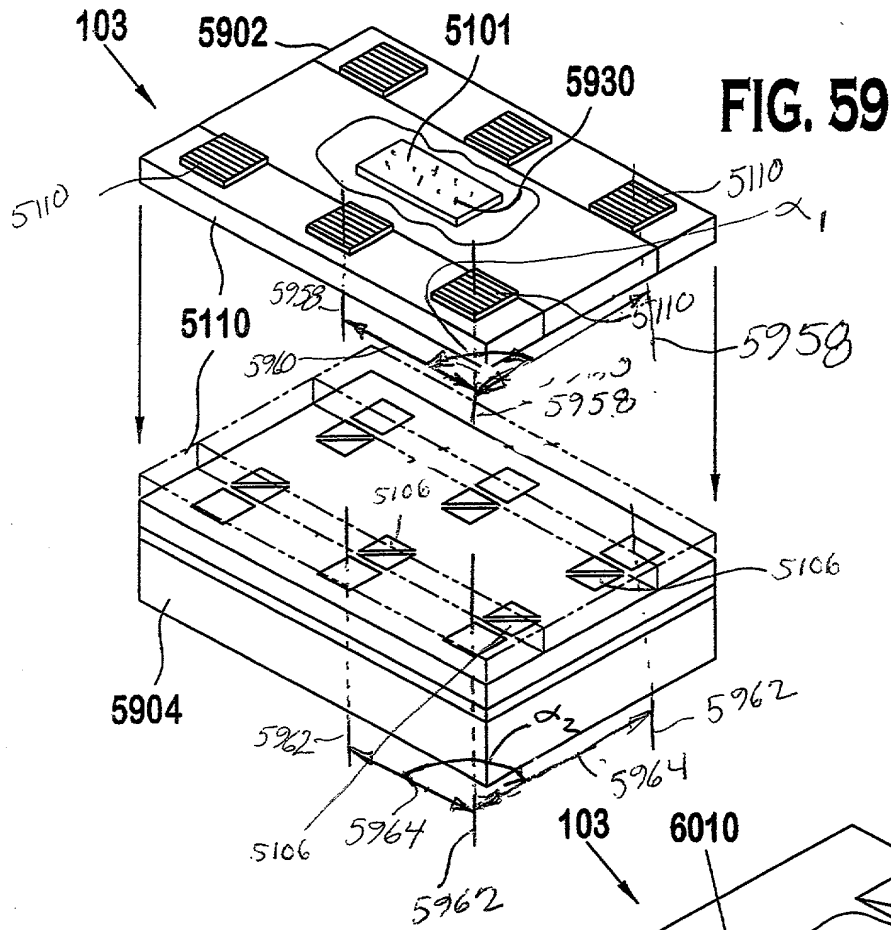
**FIG. 51**



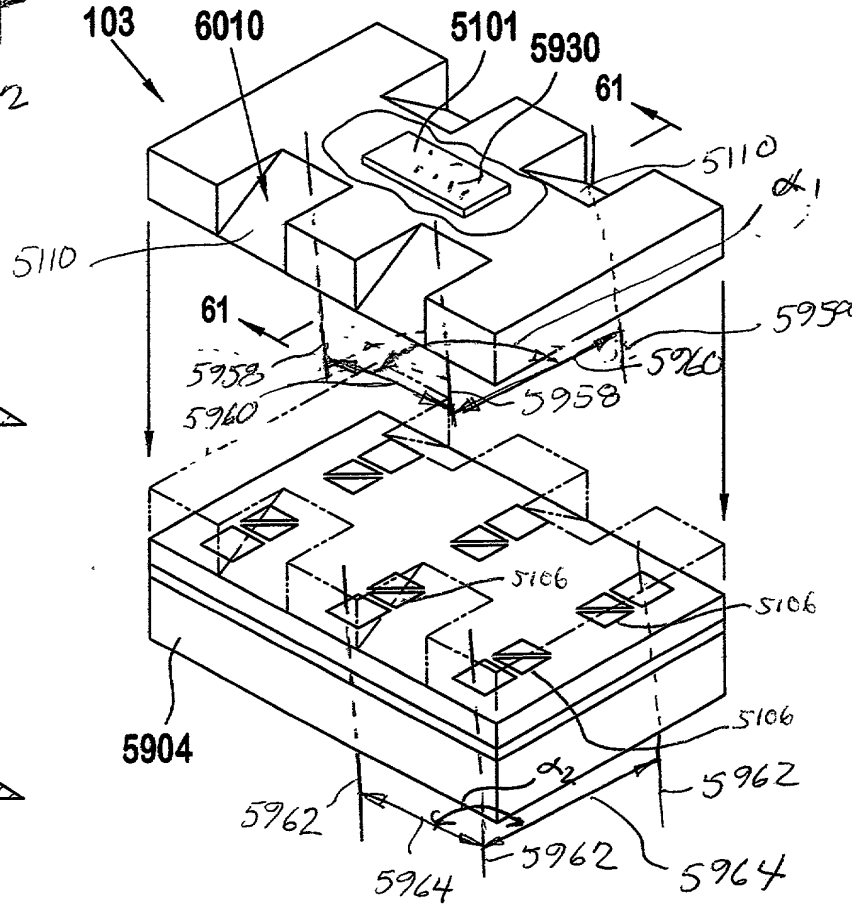
**FIG. 52**



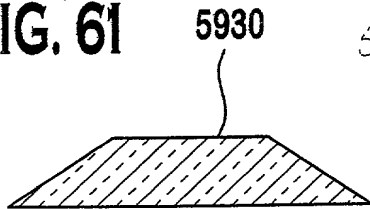
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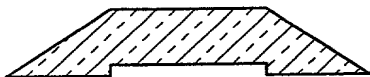
**FIG. 60**



**FIG. 61**



**FIG. 62**



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FIG. 67

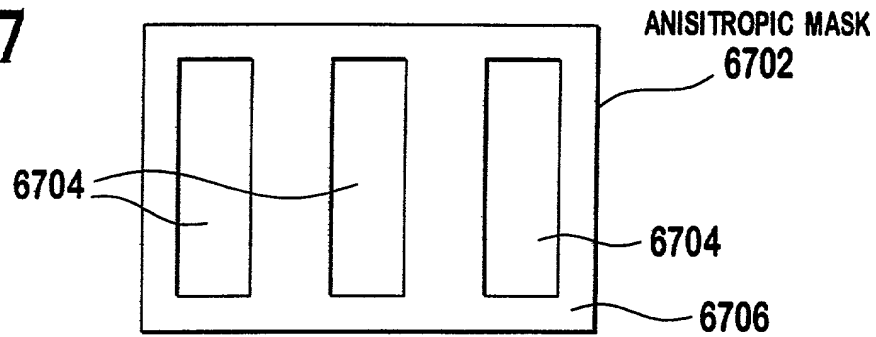


FIG. 68A

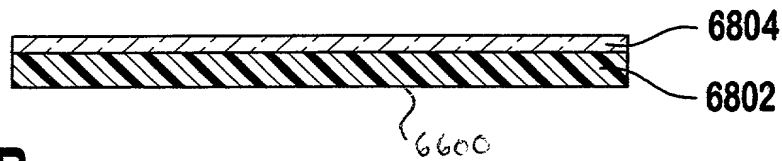


FIG. 68B

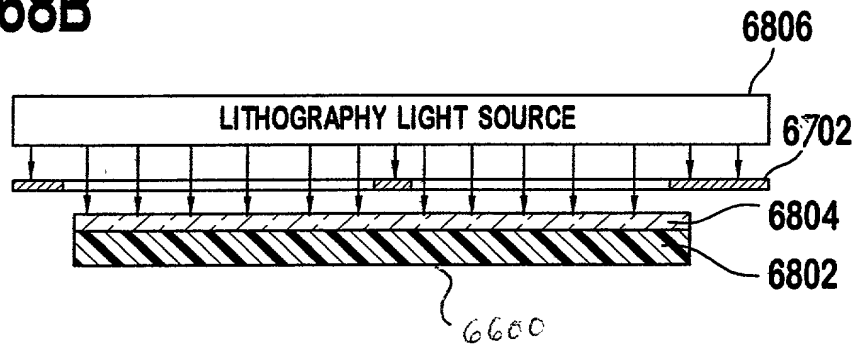


FIG. 68C

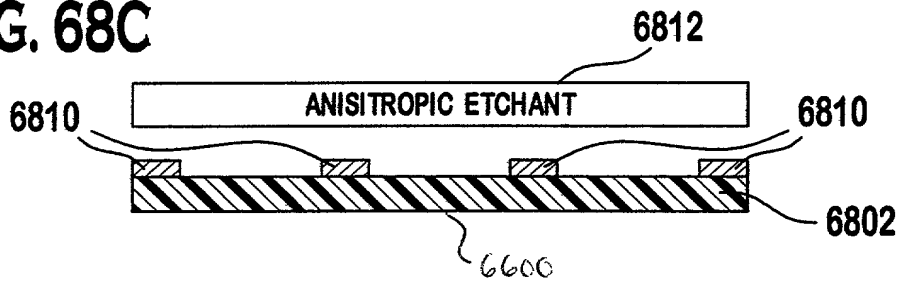
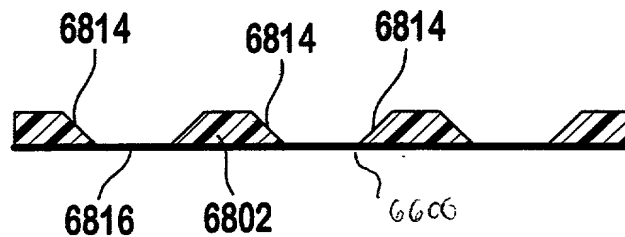
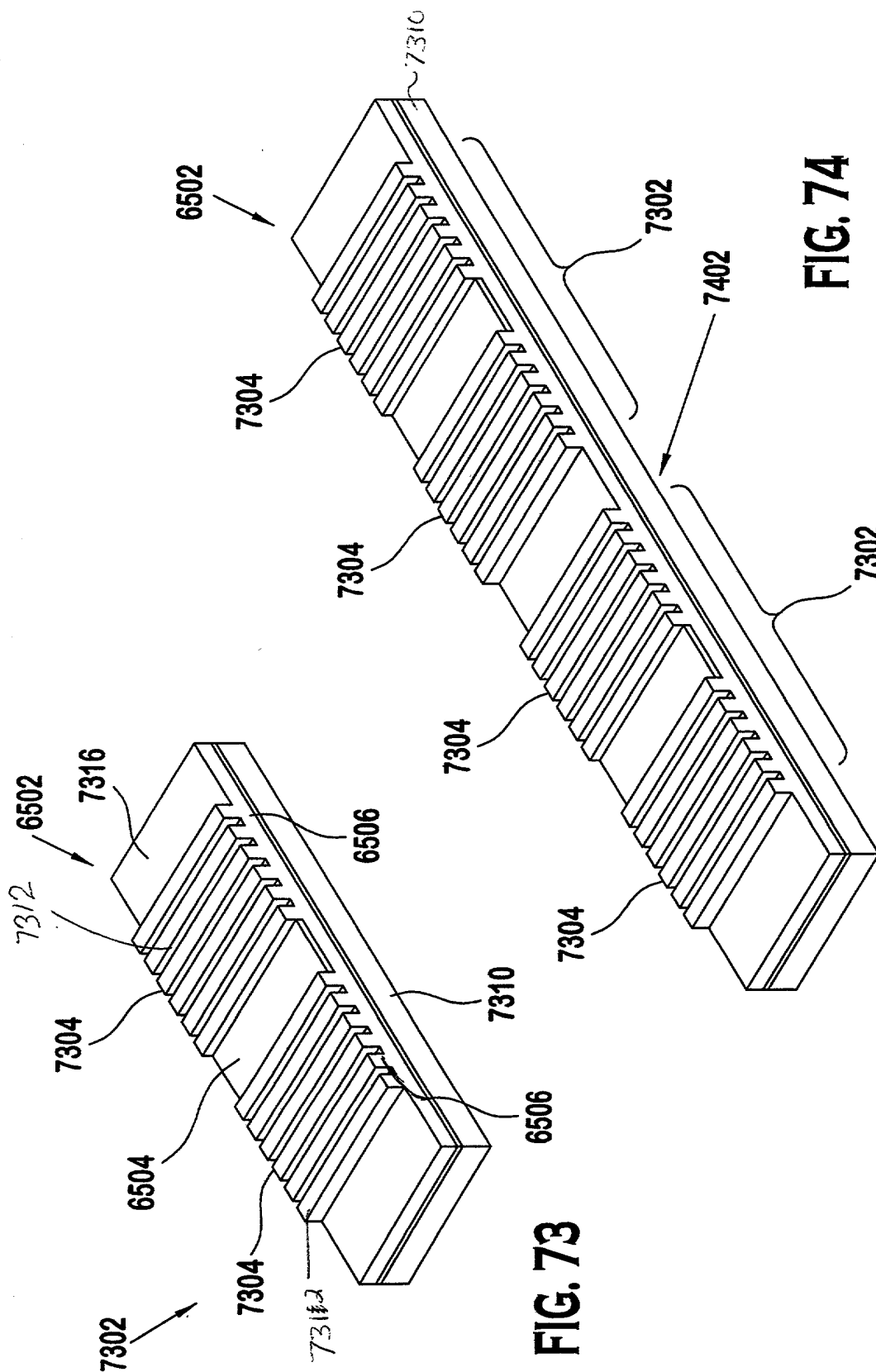


FIG. 68D







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FIG. 75

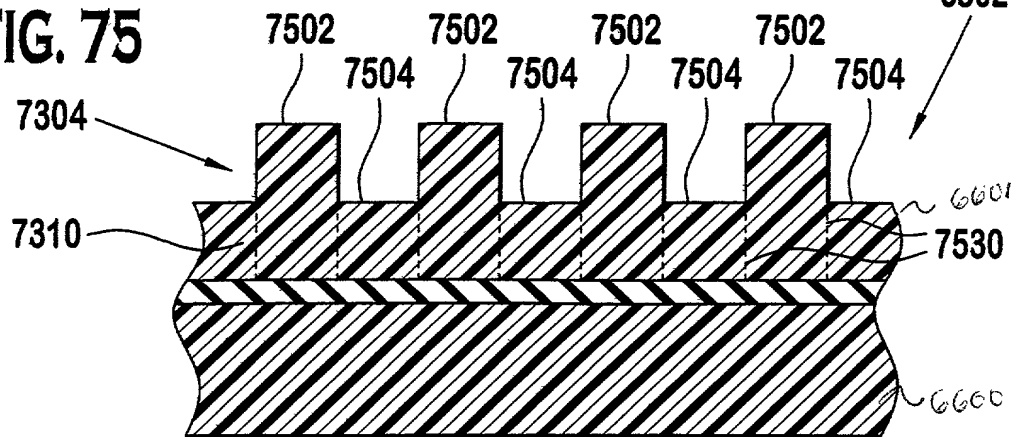


FIG. 76

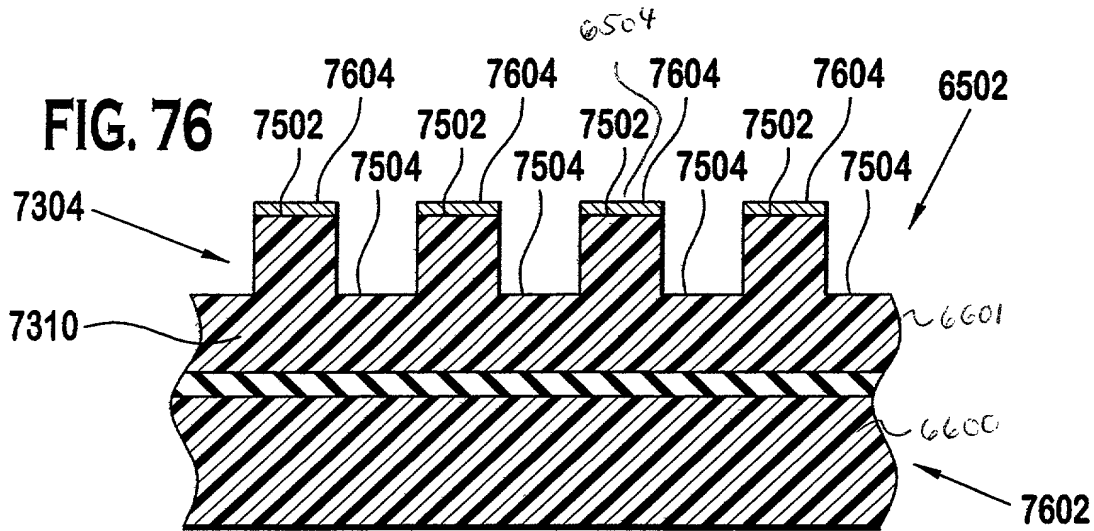
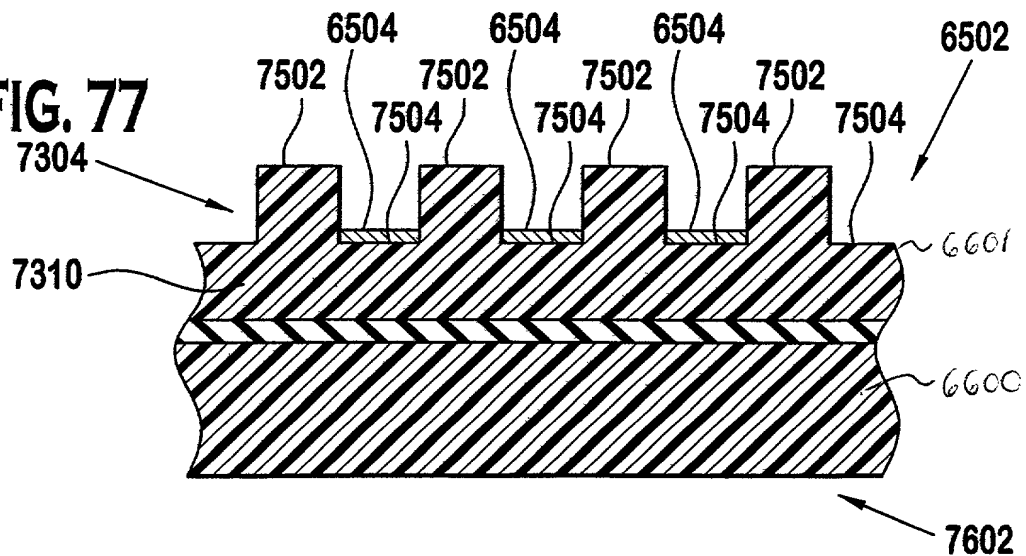


FIG. 77



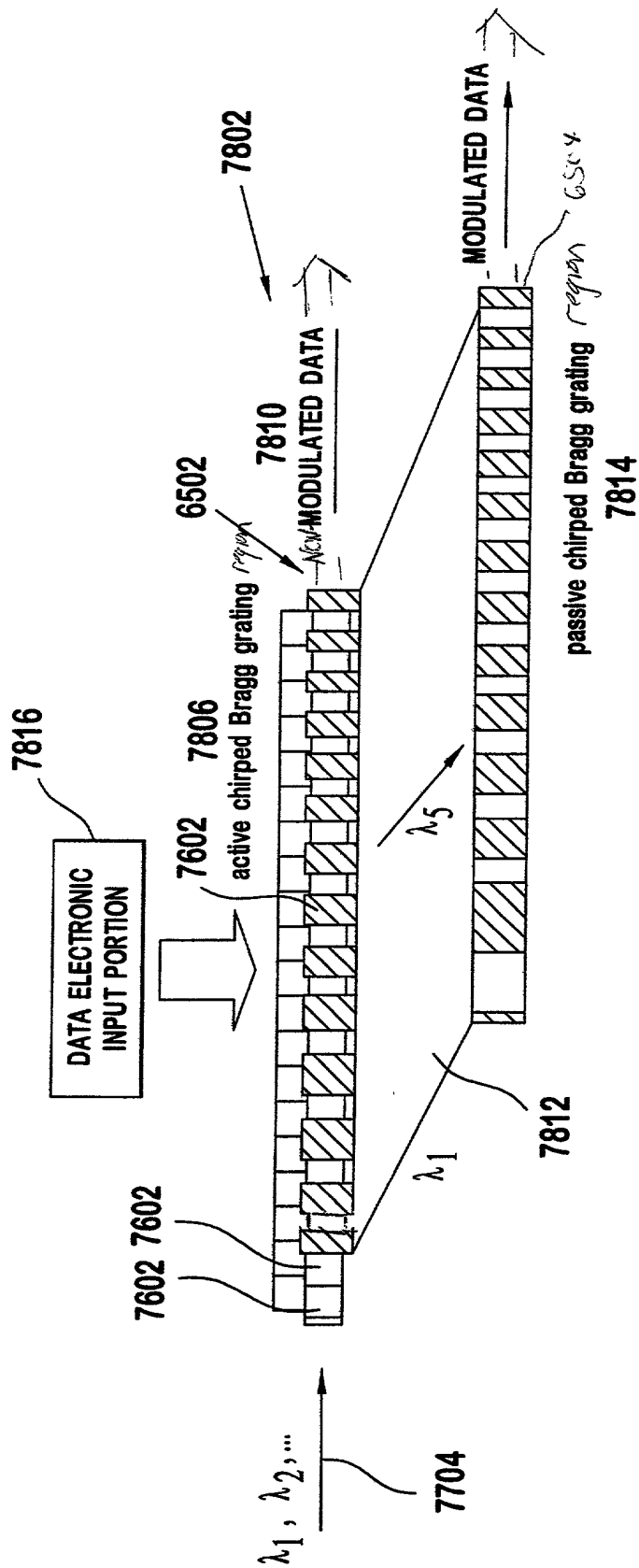


FIG. 78

F1 G. 82

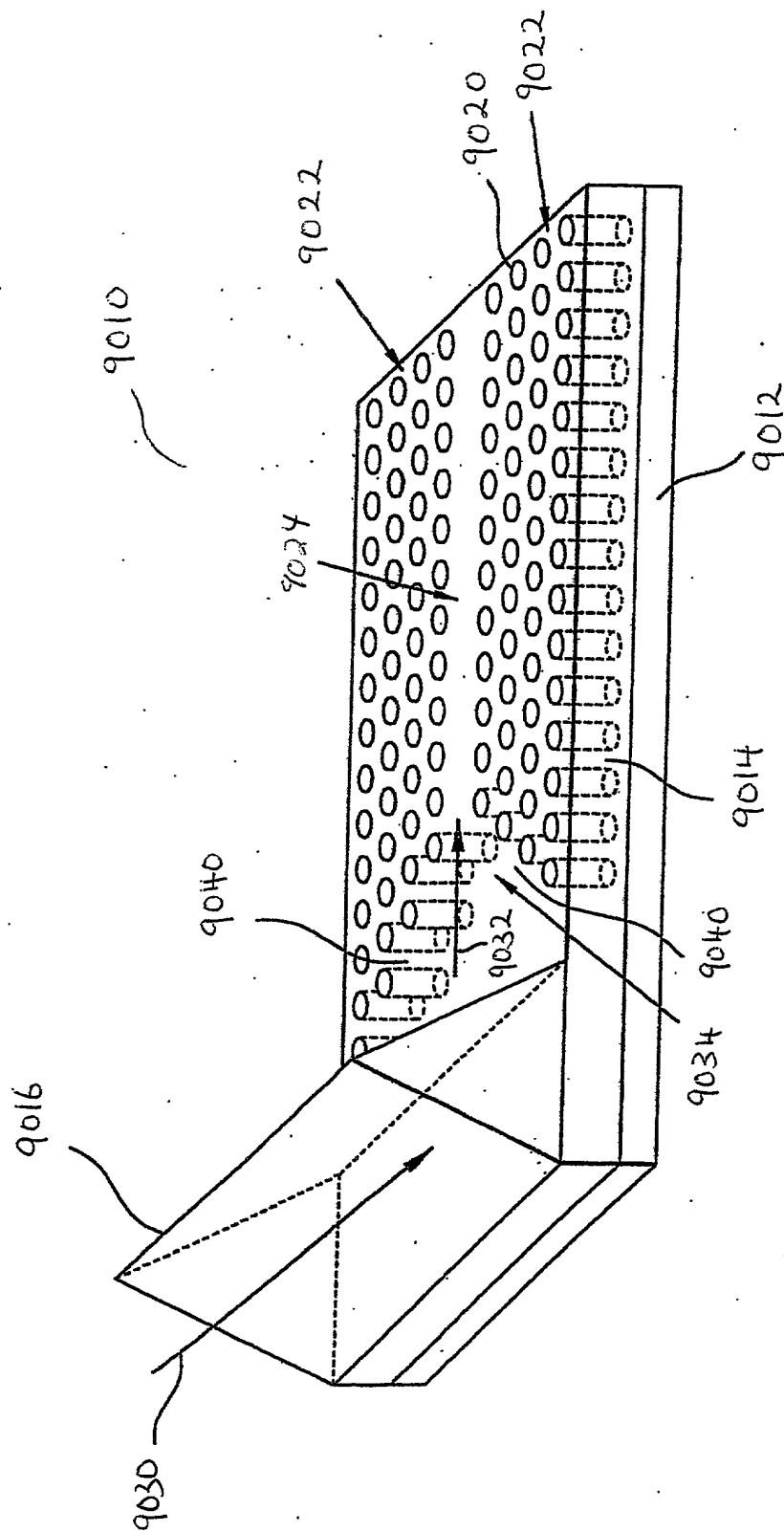




FIG. 83

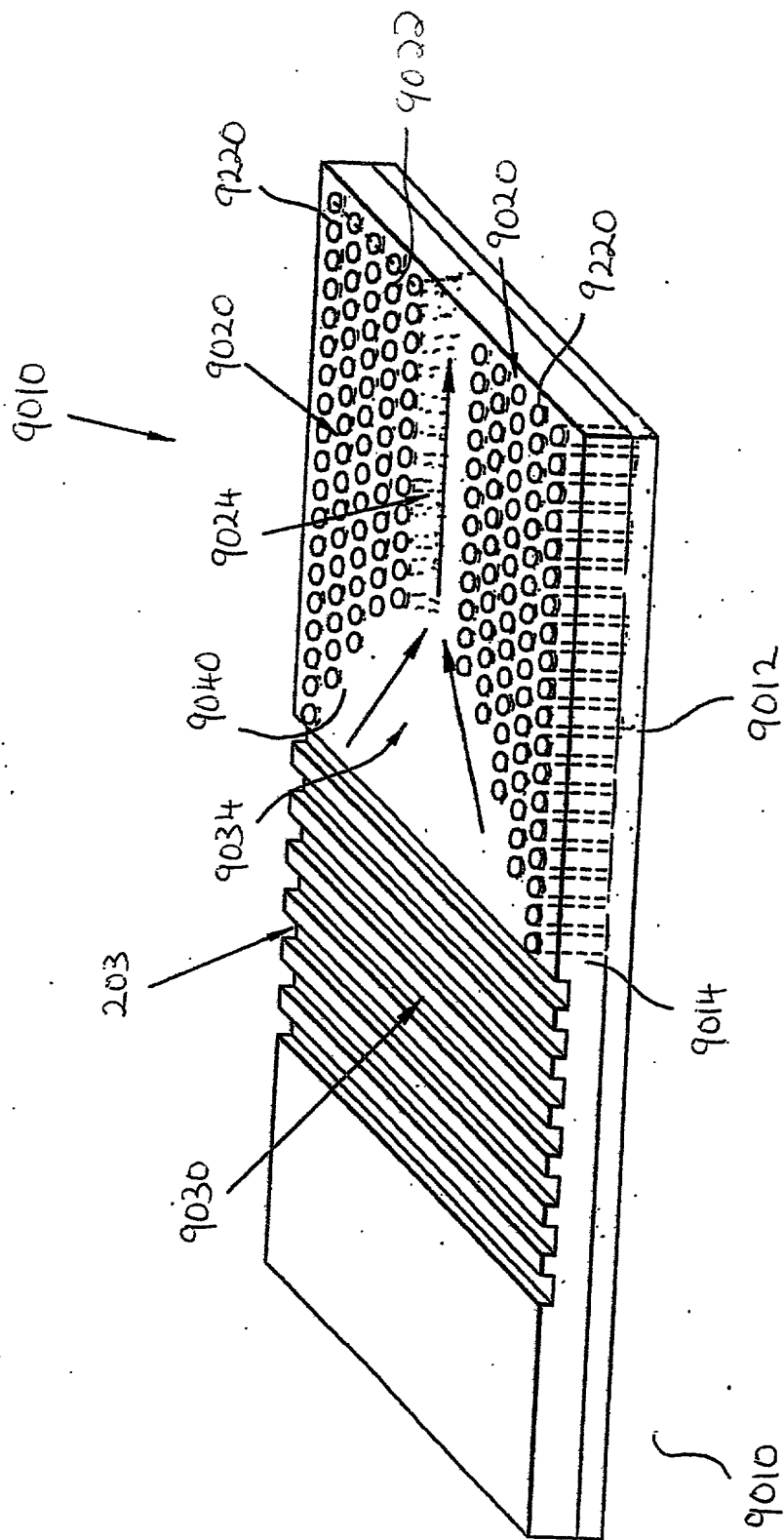


FIG. 88

